# Hardware

- System Design Considerations
- Proposed Hardware Configurations
- Procurement Plan

# System Design Considerations

- Reliable
- Affordable
- Modular
- Scalable
- High Performance
- Storage. Lots of Storage

# Proposed Hardware Configurations

- Server
  - Commodity hardware
  - Compatible with either storage solution
  - High Availability Design
- Storage systems
  - Fiber Channel SAN
  - Direct Attached SATA Drives

# Servers

- Rack Mount
- Hardware RAID
- Redundant Power
- Fault Tolerant

# Fiber Channel SAN

- Flexible
- Very high performance
- Highly available
- SAN controllers provide many useful features for a system like this
- Expensive Infrastructure
  - Switches, Controllers, Disks, etc
- Volume size limited by the OS

# Direct Attached SATA

- Inexpensive high performance drives
- Inexpensive controllers
- Systems must be sized properly at time of purchase
- Not as flexible as SAN
- Volume size limited to disk capacity of SATA enclosure

# System Design

- Highly Available Servers with Direct Attached SATA Drives
  - RAID controllers with RAID 5 arrays
  - Multiple RAID 5 arrays configured in a stripe set at the OS level

# Procurement

- New systems have to be purchased with each Data Release
  - Two machines (ATA based) have been purchased to serve DR2
  - Two machines (SATA based) have been purchased to load data for DR3 and DR4
  - Two machines will have to be purchased to serve DR3

# Procurement

- Two machines will have to be purchased to load and serve DR5
- The SATA based machines used to load DR3 and DR4 will be used to serve DR4
- Any additional data (re)processing that needs to occur during the DR5 load will require an additional purchase

# Support

- CD/CSS/CSI will assist SDSS with the following:
  - Configuring external monitoring (with automatic fault notification) of systems serving the current data release to the public and collaborators
  - Configuring servers for maximum performance and availability
  - System monitoring

# Support

- Systems serving the current data release to the public will be supported on a 24 by 7 basis (assuming similar hardware support) by CSI on call personnel
- Problems will be addressed within 8 hours and resolved (within our capabilities) within 24 hours

# Support

- Systems serving data to the collaboration and the older public releases will be supported 9 to 5 by 5
- Problems will be addressed within 24 hours and resolved (within our capabilities) within 48 hours

# Summary

- Future Hardware Needs – current plan
  - 2 - DR3 Servers (place order March 2004)
  - 2 - DR5 Servers (place order Fall 2004)
- Runs Database Support
  - 3 additional servers
    - Data loading
    - Collaboration Server
    - Warm backup for served data
  - Servers cost ~12,500.00 each